

IN THE CLAIMS:

Claims 1, 4, 5 and 8-14 stand as follows, wherein claims 2-3 and 6-7 are hereby withdrawn from further consideration without prejudice or disclaimer:

1. (Original) A magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level.
2. (Withdrawn) A magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of an antiferromagnetic layer, a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level.
3. (Withdrawn) A magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of a ferromagnetic layer, an insulating layer and a semiconductor layer, and in which said ferromagnetic layer is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level.
4. (Previously Presented) A magnetic head comprising a magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy

than said Fermi energy and the other spin has a metallic band at the same level.

5. (Previously Presented) A magnetic sensor comprising a magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level.
6. (Withdrawn) A magnetic head comprising a magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of an antiferromagnetic layer, a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level.
7. (Withdrawn) A magnetic sensor comprising a magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of an antiferromagnetic layer, a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level.
8. (Previously Presented) A solid state memory comprising a magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic

structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level.

9. (Original) The magnetoresistance device according to claim 1, wherein said magnetoresistance device has a negative resistance when magnetizations of said first and second ferromagnetic layers are parallel to each other.
10. (Original) The magnetoresistance device according to claim 1, wherein said magnetoresistance device has a negative resistance when magnetizations of said first and second ferromagnetic layers are antiparallel to each other.
11. (Original) The magnetoresistance device according to claim 1, wherein said first or second ferromagnetic layer is formed of zinc-blende type MnC.
12. (Original) The magnetoresistance device according to claim 1, wherein said first or second ferromagnetic layer has a zinc-blende type crystal structure and is formed of an Mn compound.
13. (Original) The magnetoresistance device according to claim 1, wherein said first or second ferromagnetic layer has a zinc-blende type crystal structure and has a lattice constant in a range of 4.0 to 4.5 Angstroms.
14. (Previously Presented) A magnetic head which comprises a magnetoresistance device with a multilayer structure which has a ferromagnetic tunnel junction formed by lamination of a first ferromagnetic layer, an insulating layer and a second ferromagnetic layer, and in which at least one of said first and second ferromagnetic layers is a half-metallic ferromagnet formed of a material having such an electronic structure that one spin having a metallic band near Fermi energy has a gap at a level of higher energy than said Fermi energy and the other spin has a metallic band at the same level wherein said magnetoresistance device has a negative resistance when magnetizations of said first and second ferromagnetic layers are antiparallel to each other and operates under a finite bias indicating a negative resistance area.